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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,825	10/16/2003	Xiaoru Wang	82897AD-W	8478

7590

08/28/2006

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EXAMINER

SHOSHO, CALLIE E

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 08/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

5

Office Action Summary

Application No.

10/686,825

Applicant(s)

WANG ET AL.

Examiner

Callie E. Shosho

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-7 and 9-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-7 and 9-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. All outstanding rejections are overcome by applicants' amendment filed 6/1/06. It is noted that the double patenting rejection of record is overcome by applicants' filing of proper terminal disclaimer on 6/1/06. Additionally, applicants' filing of new oath/declaration is noted.

The new grounds of rejection set forth below are necessitated by applicants' amendment and thus, the following action is final.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-2, 5-7, 9-10, and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishii et al. (U.S. 6,843,553).

Ishii et al. disclose solvent-based ink comprising solvent such as xylene and 0.5-20% colored polymer particles, i.e. composite colorant polymer particles, comprising pigment and polymer obtained from styrene, (meth)acrylate, acrylonitrile, vinyl chloride, etc. wherein the polymer possesses weight average molecular weight of 10,000-500,000. The composite colorant polymer particles possess average particle diameter of 100-1500 nm. It is disclosed that the ink comprises 0.5-20% pigment/polymer and 0.5-5% pigment from which it is calculated that there is present 15-19.5% polymer from which it is calculated that the ratio of pigment to polymer is approximately 0.33 (5/15) (col.1, lines 6-12, col.6, lines 46-49, col.21, lines 14-17, 28, and 50-52, col.21, line 62-col.22, line 7, col.22, lines 15-22 and 44-63, and col.23, lines 26-30). There is

no disclosure in Ishii et al. of process as required in present claim 2 or present claim 15.

However, “even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself”. See MPEP 2113. Thus, although Ishii et al. do not disclose the presently claimed process for making the composite colorant polymer particles, it is noted that “[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) . Further, “although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product”, *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir.1983). Therefore, absent evidence of criticality regarding the presently process and given that Ishii et al. meet the requirements of the claimed composite colored polymer particles, it is clear that Ishii et al. meet the requirements of present claims 2 and 15.

It is noted that the present claims require composite colorant polymer particles wherein the mean particle size is less than about 200 nm while Ishii et al. disclose colored polymer particles wherein the mean particle size is 100-1500 nm.

As set forth in MPEP 2144.05, in the case where the claimed range “overlap or lie inside ranges disclosed by the prior art”, a *prima facie* case of obviousness exists, *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed.

Cir. 1990). Further, it would have been within the skill level of one of ordinary skill in the art to recognize that the mean particle size of the colored polymer particles must be small enough so that the colored polymer particles do not flocculate or aggregate and cause clogging of printer nozzles.

In light of the above, it therefore would have been obvious to one of ordinary skill in the art to use composite colorant polymer particles in Ishii et al. with mean particle size, including that presently claimed, in order to produce ink that will not clog the printer nozzles, and thereby arrive at the claimed invention.

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishii et al. as applied to claims 1-2, 5-7, 9-10, and 12-15 are above, and further in view of Adams et al. (U.S. 2002/0147252).

The difference between Ishii et al. and the present claimed invention is the requirement in the claims of specific type of pigment.

Ishii et al. disclose the use of quinacridone pigment, phthalocyanine pigment, carbon black, etc., however, there is no explicit disclosure of specific pigment as presently claimed.

Adams et al., which is drawn to ink jet ink comprising nonaqueous vehicle and polymer coated pigment, disclose the use of “conventional colored pigment” including quinacridone pigment, phthalocyanine pigment, and carbon black such as Pigment Red 122, Pigment Blue 15, and Pigment Black 7 (paragraph 17).

In light of the above, it therefore would have been obvious to one of ordinary skill in the art to use conventional pigment including Pigment Red 122, Pigment Blue 15, or Pigment Black

7 as the pigment in Ishii et al. in order to produce ink with desired colored, and thereby arrive at the claimed invention.

5. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishii et al. as applied to claims 1-2, 5-7, 9-10, and 12-15 above, and further in view of either Miyabayashi et al. (U.S. 6,271,285) or Cooke et al. (U.S. 6,458,458)

The difference between Ishii et al. and the present claimed invention is the requirement in the claims that the polymer is crosslinked.

Miyabayashi et al., which is drawn to ink jet ink, disclose using a crosslinked polymer given that such polymer permits wettability of the surface of the nozzle plate by the ink composition to be further reduced which allows the ink to be more stably ejected (col.4, lines 50-57).

Alternatively, Cooke et al., which is drawn to polymer coated pigment suitable for use in coatings with non-aqueous medium, disclose polymer coated pigment wherein the polymer is crosslinked in order to increase the shear resistance and thus, prevent loss of the polymer coating from the pigment during blending of the ink (col.7, lines 38-40 and 62-65, col.14, lines 32-37, and col.24, line 67-col.25, line 4).

In light of the motivation for using crosslinked polymer disclosed by Miyabayashi et al. or Cooke et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use crosslinked polymer in the composite colorant polymer particles of Ishii et al. in order to produce ink which is stably ejected from printer, or alternatively, to produce stable ink,

i.e. no loss of the polymer coating from the pigment during blending of the ink, and thereby arrive at the claimed invention.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1714

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Callie E. Shosho
Primary Examiner
Art Unit 1714

CS
8/17/06